

Remarks/Arguments

The Examiner's Office Action mailed February 3, 2004 and the references cited there in have been reviewed. In this response, claims 4, 5, and 6 are canceled, claims 1, 7-9, 18, 22, and 23 are amended, and new claims 46-65 are added. In addition, pursuant to the Examiner's decision to make the Restriction Requirement in this application final, claims 24-45 are canceled without prejudice to the later filing of one or more divisional applications. Applicant requests that the application be reexamined and reconsidered in view of these amendments and further in view of the following remarks.

In the Office Action mailed February 3, 2004, applicant's original claims 1-23 were rejected as follows: claims 1-3 were rejected under 35 U.S.C. §102(b) as being anticipated by, or under 35 U.S.C. § 103(a) as being obvious in view of U.S. Patent No. 6,045,070, issued to Davenport; claims 1-21 and 23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,705,030, issued to Gassner, III, et al., with or without Davenport; and claim 22 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Gassner, III, et al., with or without Davenport, and further in view of U.S. Patent No. 4,098,629, issued to Goldstone.

Davenport indicates that poultry carcasses and feathers can be ground in a multishear dispersion grinder or in a disc attrition mill. The disc attrition mill described in the Davenport patent is said to grind solids in a carrier fluid and is equipped with an interchangeable disc and variable displacement stator/rotor arrangement.

Gassner, III, et al. disclose only a process wherein feathers must be twice washed in a polar organic solvent (ethanol) and the solvent must be removed and the feathers dried prior to mechanical shredding or shearing. Applicant respectfully submits that the

Examiner's contention that column 5, lines 1-9 of Gassner, III, et al. disclose "treating the feathers with chemical agents during comminuting, including peroxide," is incorrect. At column 5, lines 1-9, Gassner, III, et al. merely mention two alternative downstream fiber treatment procedures which cannot be conducted until after the feathers are washed in ethanol, the ethanol is removed, the feathers are dried, the dried feathers are comminuted, and the dry, comminuted feathers are separated into their fiber and quill components. Specifically, Gassner, III, et al. teach at column 5, lines 1-9 that the separated fiber product "can be further treated by mechanical beating" or "alternatively," the "fibers may be subjected to chemical treatment with redox reagents such as 10% hydrogen peroxide for about 1 hour." Thus, rather than disclosing or suggesting that the feathers be treated with peroxide liquid during comminuting, Gassner, III, et al. actually require that the feathers must be clean and dry during the comminuting step.

Applicant also notes that Gassner, III, et al. neither disclose nor suggest at column 5, lines 20-26 that a detergent be added to the feathers during comminuting. Rather, it is merely suggested that water and/or other wetting agents or additives can be added to a fiber pulp composition following the solvent washing, solvent removal, drying, comminuting, and fiber/quill separation steps. Further, Gassner, III, et al. neither disclose nor suggest the addition of a reduced paper to a reduced feather material. Rather, at column 7, line 11 Gassner, III, et al. mention only a composite sheet of feather/kenaf fiber.

Finally, Goldstone discloses only the formation of a fibrous blanket or batt wherein the entire blanket product can be heated and molded using a vacuum to hold the blanket in place.

Applicant therefore respectfully submits that the references cited in the Office Action mailed February 3, 2004 neither disclose nor suggest several key features called for in the claims now pending. For example, Applicant's claims 1-3, 7-23, and 46-55, as amended, call for the step of simultaneously reducing and cleaning feathers in a refiner, pulper, or combination thereof wherein the feathers are delivered through the reducing apparatus in a carrier fluid comprising at least one cleaning agent. Claims 18-23 and 52-65 call for the step of forming a combined reduced material comprising reduced feathers and reduced paper wherein the reduced feather material is present in an amount in the range of from about 40% to about 95% by weight and the reduced paper is present in an amount in the range of from about 5% to about 60% by weight.

Examples of additional features of Applicant's claims which are neither disclosed nor suggested by the cited references include but are not limited to:

- The use of an aqueous carrier fluid solution in the reducing apparatus including hydrogen peroxide, detergent, a surface acting surfactant, bleach, or a combination thereof. (Claims 7-9)
- The use of hydrogen peroxide in the carrier fluid in an amount in the range of from about 200 ppm to about 5000 ppm. (Claim 46)
- The use of detergent in the carrier fluid in an amount in the range of from about 2 to about 20 pounds of detergent per ton of feathers. (Claim 47)
- The step of drying a separated quill material in a high velocity vortex dryer effective for grinding at least a portion of the quill material into substantially spherical particles. (Claim 48)

- A process of this type further comprising the step, following the step of drying the quill material in a high velocity vortex dryer, of recovering a quill product by delivering the quill material through at least one cyclone separator. (Claim 49)
- Separating fiber and quill material using at least one hydraulic screen. (Claim 11)
- Separating fiber and quill material using at least one centrifugal cleaner. (Claim 12)
- Drying quill material in a high agitation dryer. (Claim 13)
- Forming a sheet product from the reduced feather material produced in claim 1 using a sheeting apparatus comprising a forming box having a plurality of vacuum sections effective for removing water from the reduced feather material. (Claim 50)
- Forming a molded product from the reduced feather material produced in claim 1 using a molding apparatus comprising a forming section which employs a vacuum effective for holding suspended feather fiber on a mold. (Claim 51)
- The production of a combined reduced material comprising from about 80% to about 90% by weight reduced feather material and from about 10% to about 20% by weight reduced paper. (Claims 52 and 57)
- The formation of a combined reduced feather and reduced paper material wherein the reduced paper is formed from recycled paper, craft paper, or a combination thereof. (Claims 53 and 58)

- Delivering reduced paper and reduced feather material to a slurry tank wherein the reduced paper and the reduced feather material are mixed together to form a combined reduced material. (Claims 54 and 59)
- Forming a sheet product from a combined reduced feather and reduced paper material using a sheeting apparatus comprising a forming box having a plurality of vacuum sections effective for removing water from the combined reduced material. (Claims 55 and 62)
- Forming a molded product from a combined reduced feather and reduced paper material using a molding apparatus comprising a forming section employing a vacuum effective to hold suspended feather fiber on a mold. (Claims 22 and 64)

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In view of the above, Applicant respectfully submits that Applicants' claims 1-3, 7-23, and 46-65 are in condition for allowance. Applicant therefore requests that all of the Examiner's rejections be withdrawn and that the Examiner allow claims 1-3, 7-23, and 46-65. This paper is intended to constitute a complete response to the Examiner's Office Action mailed February 3, 2004.

Respectfully submitted,

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